



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,037	02/23/2004	Peter Jannick	037110.52895US	3798

23911 7590 01/26/2005  
CROWELL & MORING LLP  
INTELLECTUAL PROPERTY GROUP  
P.O. BOX 14300  
WASHINGTON, DC 20044-4300

EXAMINER

LEUNG, RICHARD L

ART UNIT PAPER NUMBER

3744

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/783,037		JANNICK ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Richard L. Leung		3744	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>02-23-04</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 claims "A cooling system according to claim 3," though claim 3 is drawn to a method. Therefore claim 5 is considered unclear and indefinite. For the purpose of advancing prosecution in this Office action, claim 5 will be treated as being dependent from claim 4. However, appropriate correction is still required to overcome this rejection.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 00/36046 (Dournel et al.). Dournel et al. disclose a refrigerant consisting essentially of 1,1,1,3,3-pentafluorobutane for use as a replacement for R11 (CFC-11), and expressly disclose the application of the replacement refrigerant in cooling systems comprising a turbocompressor that compresses a refrigerant. See particularly page 11, lines 18-24. It is understood that such turbocompressor cooling systems inherently

Art Unit: 3744

operate by compressing the refrigerant and allowing the refrigerant to expand in heat exchange relation with the material to be cooled.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/36046 (Dournel et al.) in view of US 5662825 (Bivens et al.). As already discussed above, Dournel et al. disclose refrigerants comprising 1,1,1,3,3-pentafluorobutane (HFC-365mfc) for use as replacements for R11 (CFC-11), and expressly discloses the application of such refrigerants in cooling systems comprising a turbocompressor that compresses a refrigerant. Dournel et al. fail to expressly disclose increasing the rotational speed of the turbocompressor, specifically increasing the speed by about 4%. Bivens et al. teach the replacement of CFC refrigerants in turbocompressor systems with a non-CFC refrigerant, and demonstrate that it is known in the art to adjust the turbocompressor speed when adapting existing systems to use new refrigerants. Bivens et al. teach an example wherein a HFC refrigerant is used as a replacement (drop in) refrigerant in turbocompressor equipment designed for use with a CFC refrigerant, showing that the compressor rotational speed must be increased from 85 r/s to 88 r/s to provide equivalent performance with the drop in refrigerant. See particularly the paragraph beginning on line 65 in column 4. This change represents a

Art Unit: 3744

3.53% increase in speed, which is considered to be equivalent to about 4%. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have increased the speed of the turbocompressor, for example by 4%, when replacing R11 refrigerant with one comprising 1,1,1,3,3-pentafluorobutane because Bivens et al. teach that doing so may be necessary for achieving equivalent performance when using new refrigerants in existing equipment designed for CFCs. Furthermore, it can be appreciated that it would have been well within the knowledge of one of ordinary skill in the art to have adjusted the speed of the turbocompressor when utilizing different refrigerants, as such would have been practiced under routine experimentation that necessarily accompanies the modification of such systems.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6660709 B1 (Dournel et al.): disclose the use of 1,1,1,3,3-pentafluorobutane compositions in turbocompressor applications as replacement for CFC-11 refrigerant.

JP 2002-226839 (Kaneko et al.): disclose a refrigerant comprising 1,1,1,3,3-pentafluorobutane.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard L. Leung whose telephone number is 571-272-4811. The examiner can normally be reached on Mon-Fri.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise L. Esquivel can be reached on 571-272-4808. The fax phone

Art Unit: 3744

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard L. Leung  
Examiner  
Art Unit 3744

  
CHERYL J. TYLER  
PRIMARY EXAMINER

rl